



**World Ophthalmology Leaders
Forum in Education (WOLFE)**
*A Forum at the American Academy of
Ophthalmology's Annual Meeting*

**Principles and Practices of Resident
Education Around the World**
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Executive Summary

Choosing the best residency candidates and providing relevant, accessible and up-to-date training is a challenge faced by residency program directors around the world. Local and national influences impact curriculum development, including variable standards on the local level and limited access to resources in many countries. A consistent concern is the fact that residents' service requirements often supercede their educational needs. Inadequate or unreliable Internet access in some countries limits residents' access to online educational resources.

Formal training in patient interaction, communication, ethics and professional behavior is limited. Typically, this type of instruction is expected to take place as residents shadow attending physicians. Some residents receive ethics training in medical school. In one program, residents read about and discussed actual incidents that had occurred at their institution.

In some programs, residency selection is based entirely on cognitive skills and exam scores. More often, it is based on exam scores, interviews and recommendations. Evaluation of a resident's performance in a program ranges from a dissertation and oral exam to examinations like the European Board of Ophthalmology (EBO) exam and the International Council of Ophthalmology (ICO) exam.

To provide clinical teaching experience and educational resources not available at the home institution, a program may invite visiting professors, exchange residents with another program or have residents attend a private practice, a company-sponsored wet lab or regional courses. Internet video conferencing technology allows residents to "attend" distant lectures or participate in online learning communities. The Ophthalmic News & Education (O.N.E.[™]) Network provides a wealth of relevant information and hosts the Resident Education Center (REC).

We invite you to share this document with leaders in your country or region. This summary is on the Academy's Web site at www.aaao.org/international/wolf.cfm.

Principles and Practices of Resident Education Around the World

Ophthalmology educators representing 15 countries, the Asia-Pacific Academy of Ophthalmology (APAO) and the Pan American Association of Ophthalmology (PAAO) convened at Atlanta's Omni Hotel on Monday, November 10, 2008, for the World Ophthalmology Leaders Forum in Education (WOLFE). Now in its fourth year, WOLFE provides ophthalmology leaders from around the world an opportunity to meet and collaborate on issues of shared interest and concern.

The overarching goal of WOLFE is to make ophthalmic education as relevant, timely and accessible as possible to ophthalmologists around the world. Open communication and the exchange of knowledge, information and expertise are the keys to achieving this goal. This year's topic for discussion was *Principles and Practices of Resident Education Around the World*.

H. Dunbar Hoskins Jr., MD, Executive Vice President of the American Academy of Ophthalmology, welcomed WOLFE participants.

"We are delighted to have all of you here to share your experiences and your ideas for improving residency education around the world," Dr. Hoskins said. "Although the residency programs represented here are diverse, their goal is the same: to produce competent, ethical and innovative ophthalmologists. We hope that this afternoon's discussions will generate a wealth of new ideas for you to share with your colleagues back home."

Dr. Hoskins then introduced program chairperson and Academy Secretary for Global Alliances Ronald E. Smith, MD, who described the program format and topics. This year's format involved roundtable discussions, with participants at each of five tables focusing on one critical topic in residency education. The topic selections and table leaders were:

- **Table 1.** The Residency Curriculum: What are the issues in your country? What works well? (Andrew G. Lee, MD)

- **Table 2.** Patient Interaction, Communications, Ethics and Professional Behavior:
How are these non-clinical skills taught in your country? (Tamara R. Fountain, MD)
- **Table 3.** Selecting the Best and the Brightest to Enter Ophthalmology Training: How do you select the right people? (Stephen D. McLeod, MD)
- **Table 4.** Faculty and Training Materials: How do you ensure that residents have the teachers and tools they need for their training? (Amel Meddeb-Ouertani, MD)
- **Table 5.** Assessing Knowledge, Competencies and Skills: How are residents evaluated? (Marko Hawlina, MD)

The Residency Curriculum

Table 1 discussions focused on curriculum development. In addition to Dr. Lee, the table members were Dexter Leung, MD (Hong Kong), Philip Lam, MD (APAO), Richard L. Abbott, MD (USA/PAAO), Richard P. Mills, MD (USA), Zelia M. Correa, MD (USA) and Ms. Monica Slater (USA/International Council of Ophthalmology, ICO). The participants described four models in use in their countries. Residency programs in Hong Kong are based on the Fellowship of the Royal College of Surgeons (FRCS) system used in the United Kingdom. Taiwan and the Philippines rely on the type of residency training used in the United States. China, Japan, Brazil and the European Union have their own national models. Brazil's is a two-tiered system that requires accreditation by the Brazilian Council of Ophthalmology (CBO) and the Ministry of Education. Southeast Asia has minimal or unknown residency curricula.

The group noted that both local and national influences have an impact on residency curriculum. Local influence is primarily related to variable standards. On a national level, language and access to resources have the greatest bearing on curriculum development.

Hong Kong, for example, has few resource limitations and has reliable access to the Internet. But access to resources is a challenge in many countries and may vary within a country. In China,

the major cities have Internet access, but many people who reside in the countryside have computers but no Internet connection. The situation is similar in Asian countries with no history as a British colony. In Brazil, however, Internet access is generally good. In other locales, online educational resources are used, but technological challenges, such as slow download speeds, make the process cumbersome.

The table members also discussed their most pressing concerns about residency training in their countries. In Hong Kong, high patient volume limits didactic time to after hours and leaves too little time to study (i.e., service requirements supercede educational needs). In Brazil, achieving a more even quality of care remains a challenge, and CBO training is based on the curriculum, not competency. Brazil also encompasses different national organizations with differing accreditation standards, and curriculum content is often customized to reflect the local epidemiology and treatment of disease. Table members also raised the issue of “hierarchical” systems in some residency programs in which a professor’s dogma trumps evidence-based medicine.

Patient Interaction, Communications, Ethics and Professional Behavior

Participants at Table 2 answered two broad questions: Are residents formally trained in patient/physician interactions, ethics and professional behavior in your country and what techniques and resources are used? In addition to Dr. Fountain, the table members were Eduardo P. Mayorga, MD (Argentina), Rubens Belfort Jr., MD (Brazil) and Ioannis G. Pallikaris, MD (Greece).

None of the table members reported formal or mandatory instruction in ethics during residency training in their country. They also were not aware of the Academy’s ethics manual, which is part of *The Profession of Ophthalmology*. In Argentina, Dr. Mayorga has used actual patient complaints about physician behavior at his hospital to create anonymous case studies that are then discussed via intranet forums. In general, ethics guidelines in the countries represented tend to be physician focused and often reflect a traditional “doctor is always right” attitude. They typically do

not address contemporary patient-centered issues. Instruction on obtaining informed consent is not part of the formalized residency curriculum.

Brazilian students enter medical school directly from high school and thus are exposed to patients early in their training. Residents are expected to learn about bedside manner and other professional behavior from the attending physicians.

The University of Crete offers a multidisciplinary ethics program at the master's degree level that some physicians complete, but it is not required. Physician-patient interactions also are not part of formal residency training in Greece. Learning in these areas is expected to take place as residents shadow attending physicians.

Selecting the Best and Brightest to Enter Ophthalmology Training

Table 3 discussions addressed the process of selecting residents and how to manage residents whose performance is unsatisfactory. In addition to Dr. McLeod, table members were Joseph Colin, MD (France), Ana Gabriela Palis, MD (Argentina), Jacob J. Pe'er, MD (Israel), Paulo A. Mello, MD (Brazil), Gregory L. Skuta, MD (USA), Caio Regatieri, MD (Brazil) and Gabriel van Rij, MD (The Netherlands).

The participants described resident selection processes ranging from those based strictly on numerical metrics (cognitive skills, scores on boards and exams) to those weighted toward the non-cognitive domain (interviews, letters and personal experience).

On one end of the spectrum, Dr. Colin noted that resident selection in France is an entirely numerical system based on medical students' scores on an exam given after the sixth year. Students choose their subspecialty and location based on their exam score, with the highest-scoring student getting to choose first, the next highest choosing second and so on.

In contrast, Dr. van Rij reported that in The Netherlands the cognitive element is more important early in a student's career, when applying to medical school. At this time, the top 10

percent of students are automatically admitted to medical school, and lower-performing students are selected by lottery. The selection process for residency programs is weighted far more heavily toward interviews and letters of recommendation. Having completed a PhD also is an advantage.

Argentina has two systems, one managed by the government and the other through private hospitals. In the private hospital system, students with good grades in medical school take an exam. Those with the best exam scores are granted an interview at a private hospital, which then selects the residents it wants. In the government system, medical students take an exam, and those with the highest scores are granted acceptance into a residency program.

Dr. Pe'er's institution has two programs, a five-year program for Israelis and a three-year program for foreign students from developing countries in Africa or Latin America. Acceptance into the program for Israelis includes scores in medical school, recommendations and personal interactions. Program directors place a premium on bringing the candidates in and having them do rotations. At the minimum, they strive to have a candidate spend a few days at the hospital to provide an opportunity for some degree of personal interaction. Finalists are chosen and interviewed by several staff members, who then vote. Foreign applicants (especially those from Latin America) are typically recommended by past residents or other people who are known by the hospital staff. African students are often scouted, and the selection process takes into account the needs of a particular area.

Dr. McLeod described a selection process that involves interviewing applicants over a four-to six-week period. Selection is based on board scores, performance in medical school and research pursuits, plus the interview. The selection process in Dr. Mello's hospital in Brazil includes an exam and an evaluation of student responses to typical medical scenarios, plus interviews.

The problem of unsatisfactory or failing residents typically involves a process of remediation and giving the resident time to show improvement. With the exception of France, all

the programs represented grant due process to failing residents. However, failing board scores, ethics violations, behavioral issues or other established criteria can be grounds for dismissal.

In France, it is nearly impossible to remove a resident from a program. It is also difficult to do anything about underperforming residents in Brazil, but these individuals undergo a series of evaluations, and if performance does not improve, they can be sent back after one year.

In The Netherlands, the residency program must document that an adequate effort was made to help the resident succeed. Residents in Argentina are given as much help as possible and are very closely supervised. Israel's residents are on probation for their first two years; after that, it is more difficult to remove a resident from a program.

Ophthalmology residents in the United States take the Ophthalmic Knowledge Assessment Program (OKAP) exam (one.aao.org/CE/EducationalContent/oKAP.aspx), a mock exam that can be used to measure year-to-year progress, pinpoint deficiencies and prepare residents for their board exams. Although the scores do not "count," they can be a good indicator that the resident needs more help. Residency program directors typically create a program for improvement for residents who are underperforming for any reason. If adequate improvement is not documented, the resident's appointment may not be renewed.

Faculty and Training Materials

Participants at Table 4 discussed how they provide access to clinical teaching expertise and to educational materials not available at their institution. In addition to Dr. Meddeb-Ouertani, the table members included Alain M. Bron, MD (France), Sandra Belalcazar-Rey, MD (Colombia), Karl C. Golnik, MD (USA) and Mr. William Felch (ICO).

The table members reported that they take advantage of a wide range of clinical teaching options to ensure that their residents receive the information they need. In some instances, hospitals exchange residents or invite visiting professors to provide the required teaching and

experience. Attendance at regional courses is another popular option for obtaining clinical information not available at the home institution. In Colombia, residents often attend a private practice, whereas company-supported wet labs are common in France.

Residency programs increasingly take advantage of the instruction available via the Internet. Using Go To Meeting® or a similar type of Web-conferencing tool allows residents to “attend” lectures by specialists via the Internet. Skype™ permits distance learning through Internet phone and video technology. With Moodle (a free, open-source course management system), residents can participate in large international online learning communities created by educators in various specialties.

The Internet also can provide educational materials that are not readily available, but they must be carefully reviewed to ensure high quality and accuracy. The Academy’s Ophthalmic News and Education (O.N.E.™) Network (www.aao.org/one) is a source of education for ophthalmologists around the world. Subspecialty areas offer breaking news; reports from meetings; journal studies; information on new drugs, technologies and procedures; reviews of Academy content; and advice as to what additional educational materials are needed in each area.

Some online resources may be difficult to use because of large files and slow download times. Additional sources of educational materials include the World Ophthalmic Residency Development (WORD) program (www.icoword.org) available from the ICO and supranational organizations such as the Middle East African Council of Ophthalmology (MEACO). In addition, books can be shared and teaching programs can make their courses available to other countries and regions. International groups like the World Glaucoma Association are valuable for their efforts to improve ophthalmic care through international cooperation and communication.

Assessing Knowledge, Competencies and Skills

Participants at Table 5 explored how residents are evaluated in the various countries represented by the group. In addition to Dr. Hawlina, the table members included Mr. David Taylor (England/ICO), Joyce N. Mbekeani, MD (USA/UAE), Pavel Rozsival, MD (Czech Republic), Lynda Smallwood, MD (USA), Benedictus G.K. Ajayi, MD (Nigeria) and Catherine Creuzot-Garcher, MD (France).

The discussion revealed variations in the length of residency training and the number of hours worked per week in the countries represented. In Europe, residency training generally lasts at least four years, and residents may work no more than 52 hours per week compared to the U.S. limit of 75 to 80 hours.

French residents have five years of training. They are evaluated by their teachers in the university every semester and then take the European Board of Ophthalmology (EBO) exam (www.ebo-online.org) at the end of their residency. The EBO exam is an assessment of knowledge, consisting of a written and oral evaluation. French residents also take a regional oral exam to validate that they have received training in all the required areas. France does not have a national exam.

Nigerian residents receive four to six years of training in one of two programs: the West African program or the National program. The final exam for the National program includes a dissertation and an oral exam on the dissertation. The final exam for the West African program involves taking one long case to examine and discuss.

The UAE is in the process of gathering information to create a residency program. The curriculum will be based on the ICO model, and the length of residencies will be three years. The residency program will be university based with didactic teaching and testing based on multiple choice and short answer questions.

The ICO assessment (www.icoph.org/assess/index.html), which has been in existence for

12 years, is taken by approximately 2,000 residents in 61 countries every year. It is comprehensive, with 1,500 available questions prepared by a bank of question writers from around the world. The assessment covers basic science, optics and refraction and has 200 clinical questions involving clinical case scenarios. It also features a sliding fee scale.

Meeting the Challenges of Resident Training

The roundtable discussions were followed by two additional presentations. Tara A. Uhler, MD, discussed “How to Maximize Benefit from Resources Like the Residency Education Center,” and Karl C. Golnik, MD, addressed “Major Issues Facing Ophthalmology Training Programs Around the World.”

In her presentation, Dr. Uhler noted that the Internet has clearly transformed the way information is transmitted and received and that today’s residents have a higher expectation and demand for how they are provided information. “They want information that is immediate, easily accessible, and hopefully culls lots of resources but uses one portal to access it. It should be interactive and hopefully fun to use, and they want it any time, anywhere.”

Dr. Uhler said resources like the Resident Education Center (REC) (www.aao.org/rec), available on the Academy’s O.N.E. Network, can harness the power of online education. The REC allows program directors to meet those needs as well as their own by developing and sharing customized online courses with pre- and post-tests. The tests are automatically scheduled for residents and allow their performance and progress to be documented and monitored.

The REC also allows program directors to collaborate and share resources with one another and, very soon, to be able to communicate with one another through forums, adding an entirely new dimension to sharing. Program directors can view a demonstration of how REC works on the O.N.E. Network (one.aao.org/RECDemo.html).

Dr. Golnik, who is editor-in-chief of the O.N.E. Network, chairs an ICO committee that focuses on improving the educational skills of residency program directors. Committee members travel to countries around the world to give two-day courses on how to teach. They have been to Pakistan and Slovenia and to Cairo, Buenos Aires, and Mexico City and were scheduled to go to Ethiopia within a few weeks.

According to Dr. Golnik, the residency program directors they work with express four main concerns: resources, standards, education emphasis and assessment. The main question, he said, is: Do you have what you need to educate residents, and do you have faculty that want to teach.

“Subspecialists can be an issue because not everyone has a group of subspecialists sitting around ready to teach,” Dr. Golnik said. “You also need time, not only for the faculty to do the teaching but for the residents to do the learning and not just see patients. You also need teaching tools—equipment, educational materials and surgical skills labs.”

Dr. Golnik posed several questions for consideration as ophthalmology educators contemplate how to improve their existing residency programs or create new ones. For example: What does it take to be a training program? Should there be standards by country or region, and should they include a standard curriculum or standard surgical training? What equipment is needed? Should all programs have a wet lab?

Is there an emphasis on education? Is there a program director for resident education? What about faculty representation? How many faculty members does a program need to adequately teach residents? Are faculty members taught how to teach?

How is performance assessed? “One of my favorite sayings is ‘Teaching does not equal learning,’” Dr. Golnik said. “We can teach all we want, but we really won’t know if the residents have learned anything unless we assess them.”

This means that programs need tools to assess medical knowledge and surgical skill and perhaps even professionalism and communication skills. Should these assessments be standardized across countries or regions?

Dr. Golnik noted that these are all issues that have come up and that have already been addressed in various ways in existing programs. New programs or ones seeking to improve can take advantage of this accumulated experience.

“Part of what this meeting is all about is to see what is out there,” he added. “Let’s not re-invent the wheel everywhere. Let’s see what we can find that is good and then share or modify it by region or by country if necessary.”

Keeping the Lines of Communication Open

The 2008 WOLFE symposium concluded with a panel discussion that provided an opportunity for participants to ask questions of the table leaders. As the meeting came to a close, lively discussions among the participants continued. The hope is that the meeting opened lines of communication that will stretch around the globe and generated a dialogue that will continue in the months and years to come.

Table Members

Table 1

Andrew G. Lee, MD (Leader, USA), Dexter Leung, MD (Hong Kong), Philip Lam, MD (APAO), Richard L. Abbott, MD (USA/PAAO), Richard P. Mills, MD (USA), Zelia M. Correa, MD (USA), Ms. Monica Slater (USA/ICO)

Table 2

Tamara R. Fountain, MD (Leader, USA), Eduardo P. Mayorga, MD (Argentina), Rubens Belfort Jr., MD (Brazil), Ioannis G. Pallikaris, MD (Greece)

Table 3

Stephen D. McLeod, MD (Leader, USA), Joseph Colin, MD (France), Ana Gabriela Palis, MD (Argentina), Jacob J. Pe'er, MD (Israel), Paulo A. Mello, MD (Brazil), Gregory L. Skuta, MD (USA), Caio Regatieri, MD (Brazil), Gabriel van Rij, MD (The Netherlands)

Table 4

Amel Meddeb-Ouertani, MD (Leader, Tunisia), Alain M. Bron, MD (France), Sandra Belalcazar-Rey, MD (Colombia), Karl C. Golnik, MD (USA), Mr. William Felch (USA/ICO)

Table 5

Marko Hawlina, MD (Leader, Slovenia), Mr. David Taylor (England/ICO), Joyce N. Mbekeani, MD (USA/United Arab Emirates [UAE]), Pavel Rozsival, MD (Czech Republic), Lynda Smallwood, MD (USA), Benedictus G.K. Ajayi, MD (Nigeria), Catherine Creuzot-Garcher, MD (France)